IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:    Badovinatz et al.

Serial No.:                                  Group Art Unit (Parent): 2151

Filed:                                       Examiner (Parent): Lao, S.

Title:     PROGRAM PRODUCT FOR AN APPLICATION PROGRAMMING
           INTERFACE UNIFYING MULTIPLE MECHANISMS


To:    Assistant Commissioner for Patents
       Washington, D.C.  20231


## PRELIMINARY AMENDMENT AND REMARKS

Dear Sir:

In response to a final Office Action dated August 29, 2000 in the parent case (U.S. Patent Application Serial No. 08/959,967), rejected claims 1-6 were canceled without prejudice. This continuation application addresses those rejected claims from the parent case, which is still pending. Kindly preliminarily amend the above-identified application as follows:


In the Specification:

At page 1, replace the second paragraph, lines 10-16, with the following paragraph:

--This Application is a continuation of U.S. Patent Application Serial No. 08/959,967, filed on October 24, 1997, which is a continuation of U.S. Patent Application Serial No. 08/641,454, filed on April 30, 1996, now abandoned, and relates to the following commonly assigned U.S. Patent Applications, each of which is hereby incorporated herein by reference in its entirety:--

At page 1, line 19, after "Serial No." insert --08/640,218--

At page 1, line 24, after "Serial No." insert --08/641,386--

At page 2, line 3, after "Serial No." insert --08/640,219--

At page 2, line 8, after "Serial No." insert --08/640,412--

At page 2, line 11, after "Serial No." insert -- 08/641,445--

In the Claims:

Amend claims 1-5 as follows:

1      1.      (Amended) A computer program product comprising a computer useable
2   medium having computer readable program code means therein for providing a single
3   application programming interface, said computer readable program code means in said
4   computer program product comprising:

5              computer readable program code means for causing a computer to [affect
6       communicating] communicate between a member of a process group of related
7       processes and another member of said process group; [and]

8              computer readable program code means for causing a computer to [affect]
9       accomplish voting on a proposed protocol among the members of said process group
10      for synchronizing said related processes of said process group, said proposed protocol
11      comprising a proposed action to be taken by at least one of the members of the
12      process group; and

13             computer readable program code means for causing a computer to implement,
14      or refrain from implementing, said proposed action in response to an outcome of said
15      voting.

1      2.     (Amended) The computer readable program code means in said computer

2   program product of claim 1, further comprising computer readable program code means for

3   causing a computer to [affect managing] manage membership of at least one of said process

4   group and a processor group of processors.


1      3.     (Amended) The computer readable program code means in said computer

2   program product of claim 1, further comprising computer readable program code means for

3   causing a computer to [affect controlling] control a group state value for said process group,

4   in the form of a synchronized blackboard with any changes thereto made available to the

5   members of the process group as changes are made.


1      4.     (Amended) A computer program product comprising a computer useable

2   medium having computer readable program code means therein for providing a single

3   application programming interface, said computer readable program code means in said

4   computer program product comprising:


5      computer readable program code means for causing a computer to [affect

6      communicating] communicate between a member of a process group of related

7      processes and another member of said process group;


8      computer readable program code means for causing a computer to [affect]

9      accomplish voting on a proposed protocol among the members of said process group

10     for synchronizing said related processes of said process group, said proposed protocol

11     comprising a proposed action to be taken by at least one of the members of the

12     process group;


13     computer readable program code means for causing a computer to implement,

14     or refrain from implementing, said proposed action in response to an outcome of said

15     voting;

16          computer readable program code means for causing a computer to [affect
17   managing] <u>manage</u> membership of said process group and a processor group of
18   processors; and

19          computer readable program code means for causing a computer to [affect
20   controlling] <u>control</u> a group state value for said process group<u>, in the form of a</u>
21   <u>synchronized blackboard with any changes thereto made available to the members of</u>
22   <u>the process group as the changes are made</u>.

1    5.     (Amended) The computer readable program code means in said computer
2    program product of claim 4, further comprising computer readable program code means for
3    causing a computer to [affect monitoring] <u>monitor</u>, by a member of said process group having
4    no voting rights, one or more aspects of said process group.

Add the following new claim 6:

1    6.     (New) A computer program product comprising a computer useable medium
2    having computer readable program code means therein for providing a single application
3    programming interface, said computer readable program code means in said computer
4    program product comprising:

5          computer readable program code means for causing a computer to
6          communicate between a member of a process group of related processes and another
7          member of said process group;

8          computer readable program code means for causing a computer to accomplish
9          voting on a proposed protocol among the members of said process group for
10         synchronizing said related processes of said process group, said proposed protocol
11         comprising a proposed action to be taken by at least one of the members of the
12         process group, said proposed action including one of a member joining said process
13         group or leaving said process group; and

14          computer readable program code means for causing a computer to implement,
15          or refrain from implementing, said proposed action in response to an outcome of said
16          voting.


## REMARKS

Claims 1-5 were originally presented in the subject application. Claims 1-5 have been amended, and claim 6 added, to more particularly point out and distinctly claim the subject invention. Therefore, claims 1-6 remain in this case.

The addition of new matter has been scrupulously avoided. In that regard, the amendments to claims 1-6 are merely commensurate with the amendments made during prosecution in the parent case. The only exception to the preceding sentence is that voting on "at least one protocol" has been changed back to the original --a protocol--, since the amendment is not necessary upon reflection.

Applicants respectfully request reconsideration and withdrawal of the sole ground of rejection from the parent case.

### 35 U.S.C. §103 Rejection:

The final Office Action in the parent case rejected claims 1-6 under 35 U.S.C. §103, as allegedly obvious over Lomet et al. (U.S. Patent No. 5,212,788) in view of Kaashoek et al. (Article, "Efficient Reliable Group Communication for Distributed Systems"). Applicants respectfully, but most strenuously, traverse this rejection.

As an initial matter, Applicants submit that Lomet et al. is improperly cited against the present application as non-analogous art.

The determination that a reference is nonanalogous art involves two steps. *Heidelberger Druckmaschinen AG v. Hantscho Commercial Products Inc.*, 30 U.S.P.Q.2d

1377, 1379 (Fed. Cir. 1994); *In re Wood*, 599 F.2d 1032, 202 U.S.P.Q. 171, 174 (CCPA 1979). First, the reference is reviewed as to whether it is within the field of the Applicants' endeavor. *Id.* Second, if the reference is not in the field of endeavor, then a determination is made as to whether the reference is reasonably pertinent to the particular problem the inventor sought to solve. *Id.*

In determining what the field of endeavor is, courts have looked to the field of endeavor set out in a patent or patent application. See, e.g., *In re Wood and Eversole*, 202 U.S.P.Q. 171 (CCPA 1979).

The field of endeavor of Applicants' invention is application programming interfaces, and, in particular, an application programming interface that unifies a plurality of mechanisms into a single, easy to understand protocol. In contrast, Lomet is directed to a timestamping capability for databases. In Lomet, in response to a query regarding the state of the database, a view of the database at a specified time is provided. No provision is made in Lomet for any deviation. As such, Lomet clearly does not fall into the same field of endeavor as Applicants' invention.

In addition, the particular problem with which Applicants' invention addresses is a need for a single application programming interface that can unify multiple protocols (e.g. communications and synchronization protocols) into one integrated and easy to use framework. In contrast, Lomet deals with a procedure for timestamping data in a distributed database without hindering the system's performance. No mention is made of unifying multiple protocols into an integrated framework. As a result, Lomet is also not reasonably pertinent to the particular problem with which Applicants' invention is concerned.

Because Lomet does not fall into the same field of endeavor as Applicants' invention and because Lomet is not reasonably pertinent to the particular problem with which Applicants' invention is concerned, Lomet is nonanalogous prior art and cannot be used in a combination to render Applicants' invention obvious. Therefore, Applicants respectfully request that the instant rejection be withdrawn.

In addition, Applicants strenuously traverse the very combination of Lomet et al. with Kaashoek et al. It is well settled that to establish a *prima facie* case of obviousness, there must be some teaching or motivation to modify the reference or to combine reference teachings. The mere fact that references can be combined does not render the resultant combination obvious unless the references also suggest the desirability of the combination. In this instance, no adequate motivation or suggestion whatsoever has been provided for combining Lomet with Kaashoek. As a result, the present invention is not rendered obvious by such combination.

The Office Action initially cites Lomet et al. as teaching voting among process group members. Kaashoek et al., on the other hand, is cited as teaching forming processes into groups. The Office Action then states:

> It would have been obvious to one of ordinary skill in the art at the
> time of the invention to use the system of Kaaoshek [sic] to the system
> of Lomet because it incorporates the ability to group processors in a
> multiprocessing environment.

However, this statement does nothing more than describe the elements or features of the resulting combination; namely, forming groups out of process members. No motivation whatsoever is provided for combining Kaashoek et al. with Lomet et al.

To illustrate this point with an example, consider two items A and B, and an invention AB. Without a doubt, combining A with B would produce AB. However, without an indication of the desirability or a statement of the motivation to do so, A cannot be combined with B to render the invention AB obvious. Furthermore, indicating that combining A with B is obvious because it produces AB is not sufficient motivation for such a combination. Instead, it merely states the end result of such combination, and is, therefore, impermissible hindsight reconstruction of the invention.

Similar to the above example, the only motivation provided for the combination of Lomet et al. and Kaashoek et al. is an indication of the end result of the combination. Namely, that "it incorporates the ability to group processors in a multiprocessing

environment." No adequate motivation has been provided for combining Lomet et al. with Kaashoek et al., the motivation given is impermissible hindsight, and further violates the well known principle that an applicant's own disclosure (i.e., the results of the invention) cannot be used against him. Consequently, this combination does not render the present invention obvious. As such, Applicants respectfully request that the instant rejection be withdrawn.

With regard to claims 3 and 4, Applicants submit that Kaashoek et al. only addresses the situation of broadcasting messages, and contains no disclosure, teaching or suggestion regarding a synchronized blackboard, as set forth in claims 3 and 4. Moreover, the final Office Action does not even address this aspect of claims 3 and 4. Therefore, Applicants submit that neither claim can be rendered obvious over Lomet et al. in view of Kaashoek et al.

Regarding claim 5, the final Office Action alleges that Lomet et al. teaches monitoring by a member with no voting rights (citing the "coordinator"). However, a careful reading of the cited section of Lomet et al. reveals that the coordinator "knows" its own vote ahead of time, and does have voting rights. As set forth in Lomet et al. at column 5, lines 44-53:

> It should be noted that the cohort 134 which acts as coordinator performs the same functions as the other cohorts during the 2PC protocol, except that the coordinator knows at the beginning of the process whether or not the cohort will be able to commit the transaction. Furthermore, this cohort goes through the prepare and commit phases of the transaction. For all intents and purposes, the coordinator can be thought of as a separate entity, even though it runs on the node of the system occupied by one of the cohorts.

Therefore, Applicants submit that claim 5 cannot be rendered obvious over Lomet et al. in view of Kaashoek et al.

With regard to claim 6, the final Office Action alleges simply that Kaashoek et al. teaches joining or leaving a process group. However, a careful reading of claim 6 reveals that the proposed action to be taken includes joining or leaving the process group. In other words,
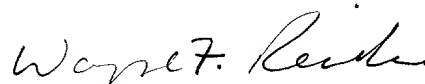
claim 6 recites that the voting includes joining or leaving the process group. This is not so in Kaashoek et al., where joining or leaving a process group are done at will. Therefore, Applicants submit that claim 6 cannot be rendered obvious over Lomet et al. in view of Kaashoek et al.

## CONCLUSION

Applicants submit that the rejected dependent claims not specifically addressed herein are allowable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their additional limitations.

For all the above reasons, Applicants maintain that the claims of the subject application define patentable subject matter and earnestly request allowance of claims 1-6.

If a telephone conference would be of assistance in advancing prosecution of the subject application, Applicants' undersigned attorney urges the Examiner to telephone him at the number provided.

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Dated: February 07, 2001

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